

Release notes for ENDF/B Development n-067_Ho_165
evaluation

ENDF
B-VII.dev

April 26, 2017

- **psyche Errors:**

1. A probability distribution is negative. This is bad.
FILE 4 / SECTION 51 / DISTRIBUTION IS NEGATIVE / FROM 1.0000E+00 TO 9.9842E-01 NEGATIVE PROBABILITY IS 2.4790E-04 (0): Neg. prob.

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FILE 4
SECTION 51
DISTRIBUTION IS NEGATIVE
FROM 1.0000E+00 TO 9.9842E-01 NEGATIVE PROBABILITY IS 2.4790E-04
```

- **fudge-4.0 Warnings:**

1. Missing a channel with a particular angular momenta combination
resonances / resolved / MultiLevelBreitWigner (Error # 0): missingResonanceChannel

WARNING: Missing a channel with angular momenta combination L = 0, J = 2.0 and S = 2.0 for "capture"

2. Potential scattering hasn't converted, you need more L's!
resonances / resolved (Error # 1): potentialScatteringNotConverged

WARNING: Potential scattering hasn't converged by L=0 at E=1250.0 eV, xs[0]/xs[0]=100.0% > 0.1%

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.14%

- **fudge-4.0 Errors:**

1. Found a negative probability
*reaction label 0: n + Ho165 / Product: n / Distribution: / angularTwoBody - XYs2d:
(Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 2.5e7 eV, worst case: -0.00165217388093

WARNING: Negative probabilities encountered. Incident energy: 3.e7 eV, worst case: -0.0225984414963

2. Found a negative probability
*reaction label 1: n + Ho165_e1 / Product: n / Distribution: / angularTwoBody - XYs2d:
(Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 3.e7 eV, worst case: -0.315181

3. Calculated and tabulated Q values disagree.
reaction label 15: n[multiplicity:'2'] + Ho164 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -8450565.548126221 eV vs -8.0304e6 eV!

4. Calculated and tabulated Q values disagree.
reaction label 16: n[multiplicity:'3'] + Ho163 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -15125010.77874756 eV vs -1.466e7 eV!

5. Calculated and tabulated Q values disagree.
reaction label 17: n[multiplicity:4'] + Ho162 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -23533157.38711548 eV vs -2.3063e7 eV!

6. Calculated and tabulated Q values disagree.
reaction label 18: Ho166 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 5781896.385864258 eV vs 6.2424e6 eV!

• njoy2012 Warnings:

1. Evaluation has no unresolved resonance parameters given
unresr...calculation of unresolved resonance cross sections (0): No URR

---message from unresr---mat 6725 has no unresolved parameters
copy as is to nout

2. Evaluation has no unresolved resonance parameters given
purrr...probabalistic unresolved calculation (0): No URR

---message from purrr---mat 6725 has no unresolved parameters
copy as is to nout

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
grouprr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 16
only mf4/mf5 provided

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
grouprr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 17
only mf4/mf5 provided

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grouprr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 37
only mf4/mf5 provided

6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
grouprr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 91
only mf4/mf5 provided

• njoy2012 Errors:

1. An angular distribution is negative
acer...monte carlo neutron and photon data (0): Neg. $P(Ej\mu)$ (b)

---message from ptleg2---negative probs found
67 for mt= 2 e= 2.500E+07

2. An angular distribution is negative
acer...monte carlo neutron and photon data (1): Neg. $P(Ej\mu)$ (b)

---message from ptleg2---negative probs found
382 for mt= 2 e= 3.000E+07

3. An angular distribution is negative
acer...monte carlo neutron and photon data (2): Neg. $P(Ej\mu)$ (b)

---message from ptleg2---negative probs found
2 for mt= 51 e= 3.000E+07